

We claim:

*Sub B1*

1. A method of generating a pool of oligonucleotides comprising:
  - a) providing a substrate and at least first and second different oligonucleotides linked to said substrate through first and second cleavable linkers, respectively; and
  - b) cleaving said first and second linkers, thereby releasing said first and second oligonucleotides from said substrate thereby generating a pool of oligonucleotides comprising said first and second oligonucleotides.

*Sub B1*

2. A method according to claim 1, wherein said first and second oligonucleotides comprise oligonucleotides of known sequence.

*Sub B1*

3. A method according to claim 1, wherein said first and second oligonucleotides are labeled.

*Sub B1*

4. A method according to claim 3, wherein different oligonucleotides bear different labels.

*Sub B1*

5. A method according to claim 3, wherein said first and second oligonucleotides are attached covalently through said first and second linkers, respectively, to said substrate.

*Sub B1*

6. A method according to claim 3, wherein said first and second oligonucleotides are synthesized on said substrate.

*Sub B1*

7. A method according to claim 1, wherein said substrate comprises discrete sites to which said first and second oligonucleotides may be linked.

*Sub C1*

8. A method according to claim 7, wherein said first and second oligonucleotides are immobilized to first and second beads through said first and second linkers, respectively, and wherein said first and second beads are distributed at said discrete sites.

*Sub B3*

9. A method according to claim 1, further comprising synthesizing said first and second oligonucleotides on said substrate.

*Sub C1*

10. The method according to claim 9, wherein said first and second oligonucleotides are synthesized by a synthesis method selected from the group consisting of printing and photolithography.

11. A method for generating a pool of oligonucleotides, said method comprising:

- providing an array comprising a substrate and a population of oligonucleotides, said population comprising at least first and second subpopulations comprising at least first and second different oligonucleotides, respectively, said first and second oligonucleotides being immobilized to first and second beads, respectively through first and second cleavable linkers, respectively, said first and second beads being distributed on said substrate; and
- cleaving said first and second linkers, thereby releasing said first and second subpopulations from said first and second beads, thereby generating a pool of oligonucleotides comprising said first and second oligonucleotides.

12. A method according to claim 11, wherein said first and second oligonucleotides comprise known sequence.

13. A method according to claim 11, wherein said first and second oligonucleotides are labeled.

14. A method according to claim 13, wherein said first and second oligonucleotides are labeled with different first and second labels, respectively.

15. A method for generating a pool of oligonucleotides, said method comprising:

- providing an array comprising a substrate and a population of oligonucleotides, said population comprising at least first and second subpopulations comprising at least first and second different oligonucleotides of known sequence, said first and second oligonucleotides being immobilized directly to a chip through first and second cleavable linkers, respectively; and
- cleaving said first and second linkers, thereby releasing said first and second subpopulations from said chip, thereby generating a pool of oligonucleotides comprising said first and second oligonucleotides.

16. The method according to claim 15, wherein said first and second oligonucleotides are labeled.

17. A composition comprising:

- a substrate; and
- at least first and second different oligonucleotides of known sequence linked to said substrate through first and second cleavable linkers, respectively.

18. A composition according to claim 17, wherein said substrate comprises discrete sites and said first and second oligonucleotides are immobilized to first and second beads, respectively, through said first and second linkers, respectively, wherein said first and second beads are distributed at said discrete sites.

19. A composition according to claim 18 further comprising at least one linker cleaving agent.

20. A composition according to claim 19, wherein at least said first linker comprises a restriction endonuclease cleavage site and said linker cleaving agent comprises at least one restriction endonuclease.

21. A composition according to claim 17, further comprising at least one solution-phase oligonucleotide.

22. The composition according to claim 21, wherein said first and second oligonucleotides comprise first and second labels, respectively.

23. The composition according to claim 22, wherein said first and second labels are different.

24. A kit comprising:

- a) a substrate;
- b) at least first and second different oligonucleotides of known sequence linked to said substrate through first and second cleavable linkers, respectively; and
- c) at least one linker cleaving agent.

25. A kit according to claim 24, wherein said first and second different oligonucleotides comprise first and second labels, respectively.

26. A kit according to claim 25, wherein said first and second labels are different.

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